

WHAT IS CLAIMED IS:

5 1. A stent of a radially compactable generally tubular body comprising a bulk-solidifying amorphous alloy, wherein the alloy is subjected to an elastic strain of at least 1.0% in a compacted form of the stent.

10 2. The stent described in claim 1, wherein the amorphous alloy has an elastic strain of at least 1.5%.

 3. The stent described in claim 1, wherein the amorphous alloy has an elastic strain of at least 1.5%, and a yield strength of more than 1.4 Gpa.

15 4. The stent described in claim 1, wherein the amorphous alloy has an elastic strain of at least 1.8%, and a yield strength of more than 1.9 Gpa.

20 5. The stent described in claim 1, wherein the amorphous alloy is subjected to an elastic strain of at least 1.5% in a compacted form of the stent.

 6. The stent described in claim 1, wherein the amorphous alloy is subjected to an elastic strain of at least 1.8% in a compacted form of the stent.

25 7. The stent described in claim 1, wherein the amorphous alloy is subjected to an elastic strain of less than 0.5% in an expanded form of the stent.

 8. The stent described in claim 1, wherein the amorphous alloy has a delta T of greater than 90°C.

30 9. The stent described in claim 1, wherein the amorphous alloy is a Zr/Ti base bulk-solidifying amorphous alloy.

 10. The stent described in claim 1, wherein the stent has a cross-section selected from the group consisting of hexagonal and round.

35 11. The stent described in claim 1, wherein the body comprises a plurality of pieces arranged in a conformation selected from the group consisting of coiled spring, helical wound spring coil, zigzag pattern, diamond shaped, and non-mesh designs.

12. The stent described in claim 1, wherein the wall of the body has a plurality of aperture openings.

13. The stent described in claim 1, wherein the body covers between 9 and 20% of a vessel into which the stent is implanted.

14. The stent described in claim 1, wherein the body covers at least 80% of a vessel into which the stent is implanted.

15. The stent described in claim 1, wherein the body comprises at least two tubular segments which overlap or abut to form a single tubular body.

16. The stent described in claim 1, wherein the stent is self-expanding.

17. The stent described in claim 1, wherein the body is branched.

18. The stent described in claim 1, wherein the body has a wall thickness of less than 0.5 mm.

19. The stent described in claim 1, wherein the body has a wall thickness of less than 0.25 mm.

20. The stent described in claim 1, wherein the stent is one of either a stent graft or intraluminal graft.

21. A method of forming a stent, comprising:
providing a molten piece of bulk-solidifying amorphous alloy;
providing a mold in the shape of a desired stent component;
casting the molten amorphous alloy into a plurality of near-to-net shape stent components;
assembling a stent from the stent components; and
compacting the stent radially to form a compacted stent, wherein the amorphous alloy piece is subjected to an elastic strain of at least 1.0% during compacting.

22. The method as described in claim 21, further comprising finishing an outer surface the stent, wherein the finishing is selected from a process selected from the group consisting of electro-polishing and chemical etching.

23. The method as described in claim 21, further comprising modifying an outer surface of the stent by a treatment selected from the group consisting of chemical treatment, thermal treatment, and a combination thereof.

24. A method of forming a stent, comprising:
providing a feedstock a bulk-solidifying amorphous alloy;
heating the feedstock to around the glass transition temperature of the amorphous alloy;
providing a mold in the shape of a desired stent component;
molding the molten amorphous alloy into a plurality of near-to-net shape stent components;
assembling a stent from the stent components; and
compacting the stent radially to form a compacted stent, wherein the amorphous alloy piece is subjected to an elastic strain of at least 1.0% during compacting.

25. The method as described in claim 24, further comprising finishing an outer surface the stent, wherein the finishing is selected from a process selected from the group consisting of electro-polishing and chemical etching.

26. The method as described in claim 24, further comprising modifying an outer surface of the stent by a treatment selected from the group consisting of chemical treatment, thermal treatment, and a combination thereof.

27. A method of forming a stent comprising:
providing a tubular body made of a bulk-solidifying amorphous alloy;
processing the tubular body to form a pattern of surface features therein, wherein the surface features extend at least partially through the wall of the body; and
compacting the stent radially to form a compacted stent, wherein the amorphous alloy is subjected to an elastic strain of at least 1.0% during compacting.

28. The method as described in claim 27, wherein the processing includes a manufacturing method selected from the group consisting of electrostatic discharge machining (EDM), chemical milling, ablation and laser cutting.

29. The method as described in claim 27, further comprising finishing an outer surface the stent, wherein the finishing is selected from a process selected from the group consisting of electro-polishing and chemical etching.

30. The method as described in claim 27, further comprising modifying an outer
surface of the stent by a treatment selected from the group consisting of chemical treatment,
5 thermal treatment, and a combination thereof.

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